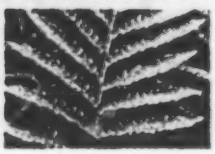
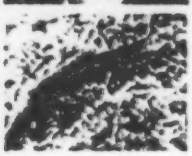
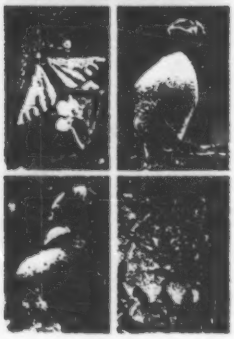
Natural Resources

General Status Ranks of Wild Species in Nova Scotia







Evaluating the status of wild species to maintain biodiversity and ensure that no species becomes at risk as a consequence of human activities.

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Background Summary
What is the General Status Assessment Process?
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General Status Assessment Process
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Background Summary

This report reflects a commitment made under the National Accord for the Protection of Species at Risk; an agreement signed by provincial, territorial and federal ministers in 1996. The broad goal of the Accord is to prevent species from becoming extinct or extirpated because of human activities. The Accord commits government partners to "monitor, assess and report regularly on the status of all wild species." This commitment will help identify those species most in need of immediate conservation and recovery action. The approach also helps to identify gaps in our knowledge and serves as a "first alert," early warning system that better aligns our priorities for species conservation recognizing the need for a heightened focus on prevention in our decision making. The Accord commits provinces, territories and federal agencies to gathering information about species on a regular and ongoing basis.

Since 1995, Nova Scotia has been an active member of a National General Status Working Group comprised of provincial, territorial and federal representatives. Contents of this report reflect our province's involvement in that process and our commitment to address the objectives, goal and spirit of the National Accord. Results of our provincial initiative in assessing the status of wild species and that of the other partners from across the country are summarized in a national report entitled **Wild Species 2000: The General Status of Species In Canada**.

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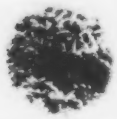
What is the General Status Assessment Process?



The General Status Assessment process is a "first alert" system that provides us with an overall indication of how well species are doing in Nova Scotia. It is a tool that helps us identify which species populations are secure, which species are sensitive and which ones are at risk. Equally important, it provides an impression of how well species with similar life histories are doing when compared against all other members within a taxonomic group. Using this approach, we can now better understand patterns of threats that may exist within and among taxonomic groups when all species have been assessed. We can now ask questions like how are bats doing in Nova Scotia when compared with all other mammals? We can also use the results to make comparisons between various taxonomic groups and can get an impression of how mammals are doing relative to birds, butterflies, fresh water fishes or freshwater mussels?

General Status Assessments, are by design - coarse grained. They do not undertake intensive review and compilation of information in the form of detailed, in-depth status reports like those commissioned by the Committee on the Status Of Endangered Wildlife in Canada (COSEWIC), or the Nova Scotia Species at Risk Working Group (SARWG). Results of the General Status Assessment process do however, compliment these more in-depth scientific assessment approaches and provide a "first-step tool" to help identify priorities for more detailed status evaluations, inventory, research and management. They also establish a list of priority species for consideration in land use decision making like Integrated Resource Management on Crown Lands (IRM) and environmental impact assessments in Nova Scotia.

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General Status Teams

Teams of experts assessed the status of individual taxonomic groups of wild species in Nova Scotia. To date, eight teams have been formed and have assessed the general status of (1) birds, (2) mammals, (3) fresh water fishes, (4) amphibians/reptiles, (5) butterflies, (6) dragonflies and damselflies (Odonata), (7) fresh water mussels and (8) vascular plants. All team members were selected on the basis of their expertise and familiarity with the science, life history and distribution of species within a taxonomic group. The General Status Assessment team listed below show the composition of the various teams formed since the process began in 1995 and their membership. Information used in assessments was drawn from published scientific literature, wildlife atlasing projects, unpublished data and expert opinion. In some cases, teams deferred a status assessment for a particular species when consultation with other experts not on a team was required.

Perhaps the greatest benefit from the process of building general status assessment teams

has been the creation of networks of experts; that in some cases, gathered together to share their knowledge for the first time. Results from their first round of assessments are presented here on this website. The goal of the process is to assess the status of wild species and to continue doing so at regular intervals of five years. Regular reassessments of status are necessary to ensure that our perspective on the condition of populations is not based on only one "snapshot" taken at a single point in time.
Reassessments will create a legacy of information for future generations and will provide numerous snapshots that will more accurately indicate the mechanisms and magnitude of change that characterize populations of wild species through time.

An added and indirect benefit of the process has been that the knowledge transferred and gaps in information that were identified had the effect of sparking a renewed energy, scientific curiosity and inspired positive conservation actions among individual team members on behalf of wild species. It is a measure of their dedication that most team members did not look upon the process as an end in itself; but rather, took with them a solidarity of purpose and renewed commitment to address gaps in our knowledge that were identified during the general status assessments. This commitment has been manifested through a flurry of new research projects, wildlife inventory, conservation and recovery initiatives undertaken over the past five years.

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Assessment Team Members

Members of the general status assessment teams for each taxonomic group.

- **Birds**
- **Mammals**
- **Fresh Water Fish**
- **Amphibians**
- **Reptiles**
- **Butterflies**
- **Dragonflies & Damselflies (Odonates)**
- **Fresh Water Mussels**
- **Vascular Plants**

Birds

Mr. Dan Busby	Canadian Wildlife Service
Dr. Richard Elliot	Canadian Wildlife Service
Dr. John Chardine	Canadian Wildlife Service
Ms. Myrtle Bateman	Canadian Wildlife Service
Dr. Anthony Erskine	Canadian Wildlife Service
Ms. Diane Amirault	Canadian Wildlife Service
Mr. Peter Hicklin	Canadian Wildlife Service
Dr. J. S. Boates	NS Dept. of Natural Resources
Mr. Randy Milton	NS Dept. of Natural Resources
Mr. Nevelle Garrity	Canadian Wildlife Service

Mammals

Dr. Tom Herman	Acadia University

Dr. Soren Bondrup-Neilsen	Acadia University
Dr. Karen Beazley	Dalhousie University
Mr. Fred Scott	Acadia University
Mr. Andrew Hebda	NS Museum

Fresh Water Fish

Mr. Bob Barnes	Fisheries & Oceans
Dr. John Loch	Fisheries & Oceans
Mr. Greg Stephens	Fisheries & Oceans
Mr. Allen MacNeil	NS Dept. of Fisheries
Mr. John Gilhen	NS Museum
Mr. Andrew Hebda	NS Museum
Mr. Barry Sabean	NS Dept. of Natural Resources
Dr. Mike Dadswell	Acadia University
Dr. Rod Bradford	Fisheries & Oceans

Amphibians and Reptiles

Mr. John Gilhen	NS Museum
Mr. Fred Scott	Acadia University
Dr. Tom Herman	Acadia University
Dr. Sherman Bleakney	Acadia University

Butterflies

Dr. Barry Wright	NS Museum
Mr. Fred Scott	Acadia University
Mr. Peter Payzant	NS Power
Mrs. Linda Payzant	

Dragonflies and Damselflies (Odonates)

Mr. Paul Brunelle	NS Museum
Dr. Tom Herman	Acadia University

Fresh Water Mussels

Dr. Derek Davis	NS Museum
Mr. Andrew Hebda	NS Museum

Vascular Plants

Dr. Liette Vasseur -	St. Mary's University
Dr. Sam VanderKloet	Acadia University
Dr. Nick Hill	Mt. St. Vincent University
Mrs. Ruth Newell	Acadia University
Ms. Marion Zinck	NS Museum

Mr. Sean Bleaney	Atlantic Conservation Data Centre
Mr. Alex Wilson	NS Museum
Dr. Sherman Boates	NS Dept. of Natural

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General Status Assessment Process

Teams assessed the status of wild species using seven criteria, please see the General Assessment Criteria below. Each criteria provides an indicator, or "yardstick" through which the quality of available biological information can be measured, understood and then grouped into broad quantitative units which are scored with a letter code. When biological information is known about a criterion, a general status score is assigned with a letter ranging from "A" (Worst) to "D" (Best). At the conclusion of the assessment the completeness of the scores and the number of unscored criteria provide a good indication of a species status in the province. Careful evaluation of all the scores assigned to the criteria allows each species to be grouped into one of the General Status Rank categories described below. Provincial general status rank are later carried forward to a National General Status Working Group who gather together similar data from all other provinces and territories to develop "Canada Ranks" that indicate the distribution and condition of the species across the country.

The reader is cautioned to note that the General Status Ranks on this web site only indicate the status of the species in the province of Nova Scotia. In cases where the species occurs outside of Nova Scotia, the status of those populations might be quite different. For example, many species that occur in our province are at the northern, southern, or eastern extralimital extent of their range and often occur in low numbers, but are common and widespread elsewhere. Thus, a species ranked as RED (At Risk, Maybe at Risk) reflects our concern for the long-term welfare of the species in this province, not necessarily across its range.

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General Assessment Criteria

Criteria used in these assessments are based on definitions used in the *Red List Categories of the World Conservation Union (IUCN)*, the *Criteria for Amendment of Appendices I and II* (Res. Conf. 9.24) of the *Convention on International Trade of Endangered Species of Wild Flora and Fauna (CITES)*, and the *Natural Heritage Program and Conservation Data Centres of the Association for Biodiversity Information - Canada.*

Population Size is defined as the current estimate of the total number of mature individuals capable of reproduction. Where populations are characterized by natural

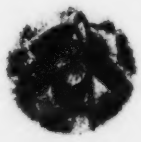
fluctuations, the minimum number should be used. Likewise, if the population is characterized by biased breeding sex ratios, it is appropriate to use lower estimates for the number of mature individuals that will take this into account. For many species, a figure of less than 1,000 individuals has been found to be an appropriate guideline for what constitutes a small population.

Trend in Population(s) is defined as an estimate of the change (if any) in the number of mature individuals over time. Where declines are indicated, rapidly declining is defined as a decrease of 50% in the last 10 years or three generations, whichever is longer. Declining is defined as a decrease of 20% in the last 10 years or three generations, whichever is longer. Natural fluctuations will not normally count as part of a decline, but an observed decline should not be considered part of a natural fluctuation unless there is evidence for this interpretation.

Trend in Distribution is defined as the change (if any) in the geographic distribution of the species over time. Where declines are indicated, rapidly declining is defined as a decrease of 50% in the last 20 years or six generations, whichever is longer. Declining is defined as a decrease of 20% in the last 20 years or six generations, whichever is longer.

Geographic Distribution is defined as the area contained within the shortest continuous imaginary boundary that can be drawn to encompass all the known, inferred, or projected sites of occurrence, excluding cases of vagrancy. The area within the imaginary boundary should, however, exclude significant areas where the species does not occur. For migratory species, the geographic distribution is the smallest area essential at any stage for the survival of the species.

Number of Occurrences is defined as the estimated number of sites where the species currently persists. A site occurrence is described ecologically as a location representing a habitat that sustains or otherwise contributes to the survival of a population. A site occurrence will be defined differently for different species, depending on their natural life history. When a species= distribution is extremely limited and there are very few site occurrences, the species is very susceptible to any number of disturbances, both predicable and unpredictable. This criterion is therefore the single most important factor influencing overall rank when the number of occurrences is few.



Threats to Population(s) is defined as observed, inferred, or projected direct exploitation, harassment, or ecological interactions with predators, competitors, pathogens, or parasites that may result in population declines. Extreme threats are significant, could affect more than half the population, and are unmitigated. Moderate threats are also serious, but affect less than half the population or are mitigated by some level of human protection. Limited threats are less significant to population viability or are being mitigated through protection measures.

Threats to Habitat(s) is defined as observed, inferred, or projected habitat alterations (loss, conversion, degradation, or

fragmentation) that may result in population declines. Extreme threats are significant, affect more than half the population, and are unmitigated. Moderate threats are also serious, but affect less than half the population or are mitigated by some level of human protection. Limited threats are less significant to population viability or are being mitigated through protective measures.

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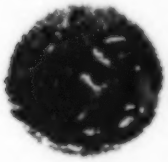
General Status Ranks and Definitions



The following are the ranks and definitions for each of the categories used in the General Status Search.

BLUE (Extirpated/Extinct) - Species that are no longer thought to be present in the province or in Canada, or that are believed to be extinct. Extirpated species have been eliminated from a given geographic area but may occur in other areas. Extinct species are extirpated worldwide (i.e. they no longer exist anywhere). Species listed by COSEWIC as extinct or nationally extirpated automatically receive an Extirpated/Extinct general status rank. This rank applies at the national level and in whichever province or territory the species formerly existed. Nationally Extirpated/Extinct species are not considered part of Nova Scotia's species richness.

RED (At Risk or Maybe at Risk) - Species for which a formal detailed risk assessment has been completed (COSEWIC assessment or a provincial equivalent) and that have been determined to be at risk of extirpation or extinction. Species that maybe at risk of immediate extirpation or extinction and are therefore candidates for interim conservation action and detailed risk assessment by COSEWIC or the Province.

YELLOW (Sensitive) - Species that are not believed to be at risk of immediate extirpation or extinction, but which may require special attention or protection to prevent them from becoming at risk.

GREEN (Secure) - Species that are not believed to be at risk, or sensitive. This category includes some species that have declined in numbers but remain relatively widespread or abundant.

UNDETERMINED - Species for which insufficient data, information, or knowledge is available to reliably evaluate their status.

NOT ASSESSED - Species that are known or are believed to be present regularly, but have not yet been assessed.

EXOTIC - Species that have been moved beyond their natural range as a result of human activity. In this report, exotic species have been purposefully excluded from all other categories.

ACCIDENTAL - Species occurring infrequently and unpredictably,

outside their usual range. Because they so rarely occur in Canada, Accidental species are not considered a part of the province's species richness.

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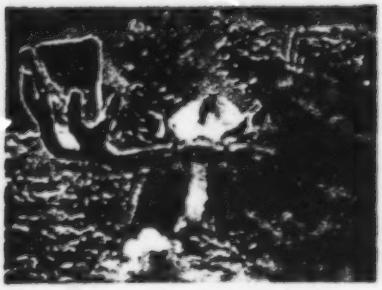
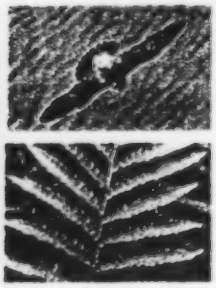
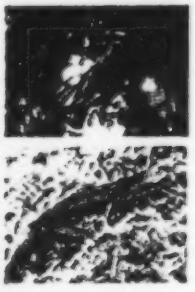
General Status Ranks of Wild Species in Nova Scotia







Evaluating the status of wild species to maintain biodiversity and ensure that no species becomes at risk as a consequence of human activities.

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Broad Overview

The following graphs provide an overview of the general status of Nova Scotia's species in the national and global context.

Click on a Graph to view full size

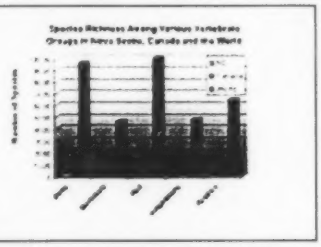

Figure 1. The number of species within six taxonomic groups of vertebrates and their occurrence by number in Nova Scotia, Canada, and the world.

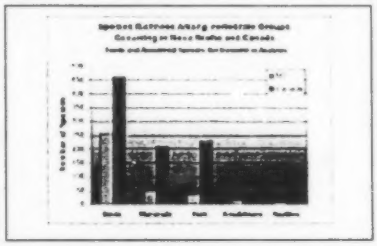

Figure 2. The number of species within five taxonomic groups of vertebrates and their occurrence by number in Nova Scotia and Canada.

Overview of General Status Assessments for Nova Scotia

For **DEFINITIONS** of the General Status ranks please look at our Background and Process page.

Click on a Graph to view full size

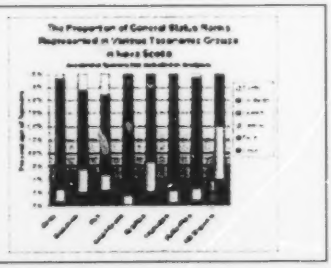

Figure 3. The proportion of general status ranks represented within the various taxonomic groups in Nova Scotia.

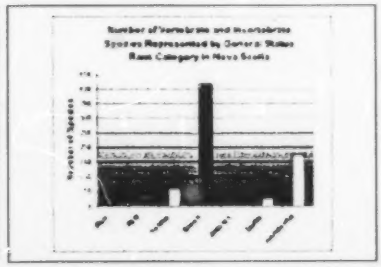

Figure 4. The number of vertebrate and invertebrate species represented by general status rank categories in Nova Scotia.

Results of General Status Assessments for Various Taxonomic Groups within Nova Scotia

For each taxonomic group you will find "Quick Facts" and a chart with a summary of the General Status in Nova Scotia.

- Birds
- Mammals
- Fresh Water Fish
- Amphibians
- Reptiles
- Butterflies
- Dragonflies & Damselflies (Odonates)
- Fresh Water Mussels
- Vascular Plants

For **DEFINITIONS** of the General Status ranks please look at our Background and Process page.

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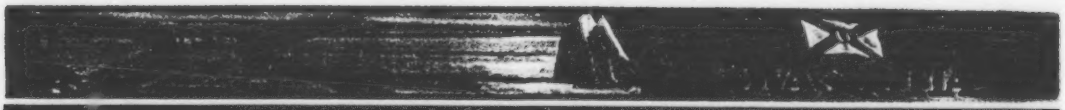

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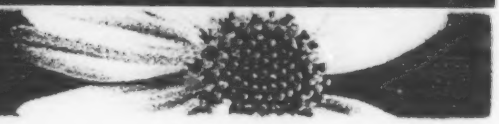
General Status Ranks of Wild Species in Nova Scotia



The status of wild species in Nova Scotia have been ranked into a series of categories that are shown below. To view a list of species and the status category into which they are grouped, select at least one colour and at least one taxonomic group (Plants, Invertebrates, Vertebrates) from the three lists **OR** fill in the name of a species in the Search portion of the form below.

☐	Extinct/Extirpated	No longer in Nova Scotia or extinct in the wild.
☐	Red	Known to be, or that is thought to be at risk.
☐	Yellow	Sensitive to human activities or natural events.
☐	Green	Not believed to be sensitive, or at risk.
☐	Undetermined	Insufficient data exists to assess status.
☐	Not assessed	Known or believed to be present in Nova Scotia but yet unassessed.
☐	Exotic	Introduced as a result of human activity.
☐	Accidental/Vagrant	Occuring infrequently and unpredicably, outside their usual range.

Plants

- Ferns and Similars
- Mosses and Similars
- Cone Bearing
- Grasses and Sedges

Invertebrates

- Butterflies
- Freshwater Mussels
- Dragonflies and Damselflies

Vertebrates

- Fish
- Amphibians
- Reptiles
- Marine Reptiles

Create List ! Reset

Looking for a Particular Species?

Fill in one or more of the fields below and then click the Search button.

Common Name:

Scientific Name (Genus):

Scientific Name (Species):

Search!

Search Results Will Include:

ELCODE	Status	Common Name	Scientific Name	Threats
Unique identifier of taxon	General Status Rank (colour above)	Name commonly used	Scientific or Latin name	Known or inferred threats to species

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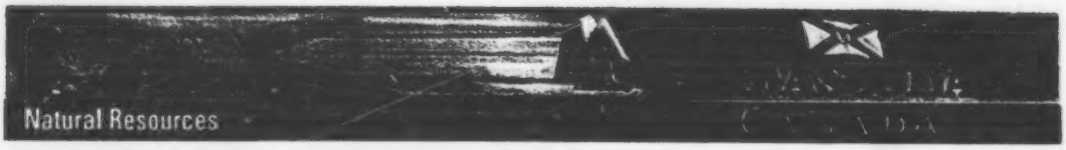

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Please **CLICK** on the thumbnails to see full photo.
Images are large (30-45KB) so they may take a few minutes to download

The photos in this gallery are organized according to the following taxonomic categories:

- **Birds**
- **Mammals**
- **Fresh Water Fish**
- **Amphibians**
- **Reptiles**
- **Butterflies**
- **Dragonflies & Damselflies (Odonates)**
- **Fresh Water Mussels**
- **Vascular Plants**

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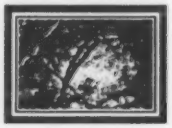
Birds

Bohemian Waxwing

Black-capped Chickadee

Common Nighthawk

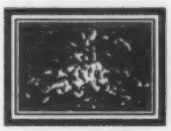

Flycatcher

Atlantic Puffin

Black Backed 3-toed Woodpecker

Barred Owl

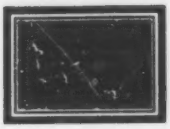
Great-horned Owl


Long-eared Owl

Peregrine Falcon

Killdeer

Goshawk



Spruce Grouse

Piping Plover

Herring Gull

Black-legged Kittiwake Colony

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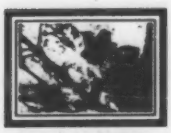
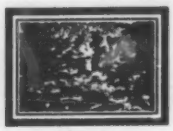
Mammals



American Marten



Moose

Beaver

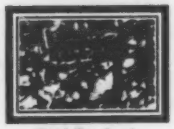
Hoary Bat

Red Bat

Snowshoe Hare

Lynx

White-tailed Deer



Red Squirrel

Southern Flying Squirrel

Coyote pups

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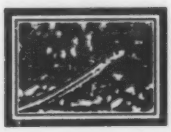
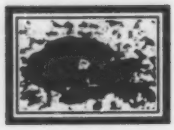
Amphibians and Reptiles



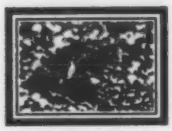
Ribbon Snake

Ring-necked Snake

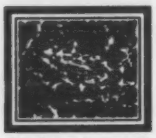


Wood Turtle

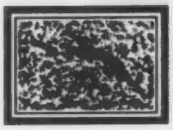
Green Snake



American Toad



Northern Leopard Frog



Red Eft (juvenile Newt)

Wood Frog

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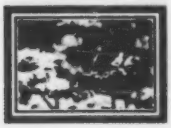
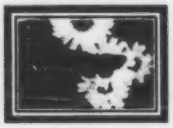
Butterflies



White Admiral Butterfly



Baltimore Checkerspot Butterfly

Canadian Tiger Swallow-tail Butterfly

Monarch Butterfly

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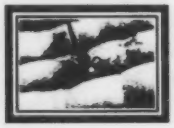
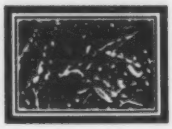
Dragonflies and Damselflies (Odonates)

River Jewelwing

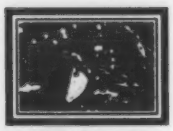


Hudsonian Whiteface (male)



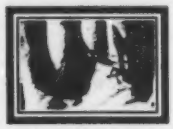
Aeshna Teneral

Hudsonian Whiteface (female)



Aeshna Emerging

Aeshna Exuviae



Damselfly Larvae

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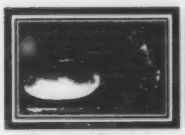
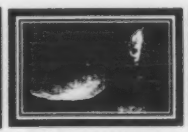
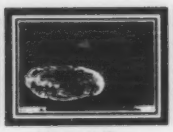
Fresh Water Mussels



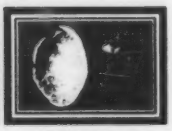
Eastern Floater



Eliptio camplanta



Margaritifera



Yellow Lamp Mussel

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Vascular Plants

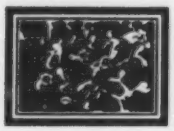
Pink Coreopsis

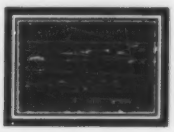
Cinnamon Fern

Sweet Pepperbush

Plymouth Gentian

Southern Twayblade


Goldencrest


Habitat of Goldencrest

Violets

Fresh Water Fish

Photos Coming Soon

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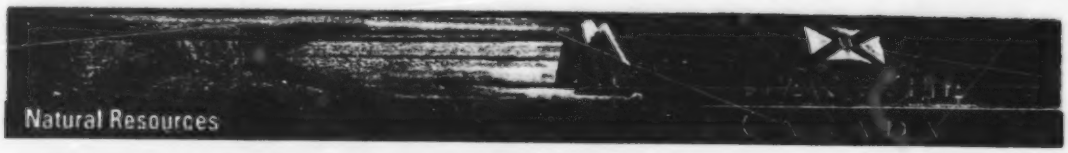

Related Web Sites

Background & Process

Overview & Results

Search General Status

Photo Gallery

Related Web Sites

Contact Us

For additional information on the assessment of the General Status of Wild Species within Nova Scotia and across Canada please visit the following sites.

Nova Scotia Endangered Species Act
The Nova Scotia Endangered Species legislation was established in 1999. This is a document on the Nova Scotia legislature's web site.

National General Status
This federal government site provides the background information on the national level assessment process and provides a search engine for all wild species in Canada

COSEWIC Background Information
COSEWIC, the Committee on Status of Endangered Wildlife in Canada is a body of government, academic and non-government experts that designates species at risk as extinct, extirpated, endangered, threatened or vulnerable. This Environment Canada site describes what COSEWIC is and its role in assessing the level of risk of extinction for Canada's wildlife species.

COSEWIC Species at Risk Search
This Environment Canada site provides a searchable database on all species in Canada. You can search by province, species, and federal COSEWIC risk
category.

IUCN Background Information
This World Conservation Network site provides information on the criteria and categories for IUCN red list rankings.

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GOVERNMENT INDEX SEARCH NEWS RELEASES

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